120 Attorney's Docket: 020431.0983

05.04.04

PATENT AF

#22 Appeal Brief Ellis May 12 04

OIPE JC124 MAY 0 3 2004 PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Arshish C. Kapadia, et al.
Serial No.:	09/333,894
Filing Date:	June 14, 1999
Group Art Unit:	3625
Examiner:	Mark A. Fadok
Title:	System and Method for Promising Delivery of Configured Products with Selected Optimizations

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RECEIVED MAY 10 2004 GROUP 3600

Dear Sir:

CERTIFICATE OF MAILING BY EXPRESS MAIL

I hereby certify that the attached Appeal Brief with appendixes A-C (80 pages) in triplicate, a check in the amounts of $330.00, a Baker Botts return postcard (1 postcard), and this Certificate of Mailing are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. 1.10 on this 3rd day of May 2004 addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Willie Jiles

Willie Jiles

Express Mail Receipt
No. EV 324629730 US

OIPE
MAY 0 3 2004
PATENT & TRADEMARK OFFICE
TC 1700

In the United States Patent and Trademark Office
on Appeal from the Examiner to the Board
of Patent Appeals and Interferences

In re Application of:	Arshish C. Kapadia, et al.
Serial No.:	09/333,894
Filing Date:	June 14, 1999
Examiner:	Mark Fadok
Group Art Unit:	3625
Title:	*System and Method for Promising Delivery of Configured Products with Selected Optimizations*

RECEIVED
MAY 1 0 2004
GROUP 3600

MAIL STOP APPEAL BRIEF - PATENT
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

Appeal Brief

Appellants have appealed to the Board of Patent Appeals and Interferences ("Board") from the decision of the Examiner mailed October 30, 2003, finally rejecting all pending Claims 1-4 and 6-43. Appellants filed a Notice of Appeal on March 1, 2004. Appellants respectfully submit this Appeal Brief in triplicate with the statutory fee of $330.00.

05/06/2004 WABDELR1 00000108 09333894
01 FC:1402 330.00 OP

Real Party In Interest

This Application is currently owned by i2 Technologies US, Inc., as indicated by an Assignment recorded on June 14, 1999, in the Assignment Records of the United States Patent and Trademark Office ("PTO") at Reel 010041, Frame 0058 (2 pages).

Related Appeals and Interferences

There are no known appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision regarding this Appeal.

Status of Claims

Claims 1-4 and 6-43 are pending in this Application, stand rejected pursuant to a final Office Action mailed October 30, 2003 (the "Final Office Action") and an Advisory Action mailed February 18, 2004 (the "Advisory Action"), and are all presented for appeal. Claim 5 was withdrawn from consideration without prejudice or disclaimer in a Response to a first Office Action mailed January 30, 2002. All claims, whether pending or withdrawn, are shown in Appendix A, along with an indication of the status of these claims.

Status of Amendments

All amendments submitted by Appellants have been entered by the Examiner, including all amendments submitted by Appellants in response to the Final Office Action mailed October 30, 2003.

Summary of Invention

The present invention is useful in the context of order entry for industries that allow product customization by customers, but is not limited to such applications. (Page 8, lines 2-4) In particular embodiments of the present invention, a purchaser enters an order through a user interface 10. (Page 8, lines 29-30) The user interface 10 is connected to a configuration engine 12, also referred to as a configurator, which provides the intelligence to restrict the selections made by the user to a set defined in advance by the manufacturer. (Page 8, line 30 through Page 9, line 1) The configuration engine 12 includes logic implementing a set of rules and relations defining the allowable configurations of components that may be selected by the user. (Page 9, lines 1-4)

In particular embodiments of the present invention, the configuration engine 12 is connected to an available to promise (ATP) engine 14, which identifies all components and subsystems which are currently actually available in time and the dates on which they can be shipped. (Page 8, line 29 through Page 9, line 3) In the preferred embodiment, a request is made to the ATP engine 14 immediately before a selection is presented to the user. (Page 9, lines 12-14) The configuration engine 12 determines a set of items to be presented for selection according to its defined rules. (Page 9, lines 14-16) Each of the items in the set is communicated to the ATP engine 14, which returns an indication of availability and a delivery date for each item to the configuration engine 12. (Page 9, lines 16-18) The configuration engine 12, through the user interface 10, then presents to the user only those items which are actually available for selection, and the earliest delivery date on which all selections are actually available. (Page 9, lines 19-22) Once a selection is made by the user, the configuration engine 12 determines a next set of items to be presented for selection. (Page 10, lines 8-10) The above process is repeated until the product is completely configured. (Page 10, lines 10-11)

In the preferred embodiment, a complete product is always defined. (Page 11, lines 22-23) Unlike prior art systems, no static default selections are established for each item. (Page 11, lines 1-2) Instead, defaults are preferably dynamically selected based upon an optimization function defined by the manufacturer and applied to the database of available items at run time. (Page 11, lines 2-5) When a configuration session begins, the configuration engine determines which selections must be made for the product to be complete, and makes default selections for them at the beginning. (Page 11, lines 23-26) Then, no matter what selections are made by the user, a complete product is always defined. (Page 11, lines 26-27) If the user does not make selections from some lists of items, the product remains complete. (Page 11, lines 28-29) Thus, the user need only make those selections that are of interest to him, with all remaining selections being fulfilled by the defaults originally selected by the configuration engine. (Page 11, lines 29-32)

Statement of Issues

Are Claims 1-4 and 6-43 patentable over U.S. Patent 6,167,383 to Henson ("*Henson*") in view of a series of pages from i2 Technologies' website dated 5/26/98 ("*Rhythm*") under 35 U.S.C. § 103(a)?

Grouping of Claims

Appellants have made an effort to group claims to reduce the burden on the Board. In the Argument section of this Appeal Brief, where appropriate, Appellants present reasons why particular claims subject to a ground of rejection are separately patentable from other claims subject to the same ground of rejection.

Appellants have concluded that the claims may be grouped together as follows:

1. Group 1 may include Claims 1-4, 6-9, and 28-43; and
2. Group 2 may include Claims 10-27.

Argument

The rejection of Claims 1-4 and 6-43 under 35 U.S.C. § 103(a) as being unpatentable over *Henson* in view of *Rhythm* is improper and should be reversed by the Board.

I. Claims 1-4 and 6-43 are Clearly Patentable over the proposed *Henson-Rhythm* Combination.

A. Overview

Claims 1-4 and 6-43 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Henson* in view of *Rhythm*. A copy of *Henson* is provided in Appendix B, and a copy of *Rhythm* is provided in Appendix C. Appellants respectfully submit that the proposed *Henson-Rhythm* combination clearly fails to disclose, teach, or suggest limitations recited in Appellants' Claims. Appellants further submit that even if the references did not fail to disclose, teach, or suggest each and every limitation recited in Appellants' Claims, which Appellants dispute, the combination of *Henson* and *Rhythm* would still be improper because the Examiner has not provided a sufficient teaching, suggestion, or motivation in the prior art to make the proposed *Henson-Rhythm* combination. Appellants further respectfully submit that the Examiner has use improper hindsight reconstruction to make the proposed *Henson-*

Rhythm combination, which the M.P.E.P. and the governing Federal Circuit case law clearly prohibit. Appellants respectfully submit that these rejections are improper and should be reversed by the Board.

B. Standard

The question raised under 35 U.S.C. § 103 is whether the prior art taken as a whole would suggest the claimed invention taken as a whole to one of ordinary skill in the art at the time of the invention. *See* 35 U.S.C. § 103(a). Accordingly, even if all elements of a claim are disclosed in various prior art references, which is certainly not the case here as discussed below, the claimed invention taken as a whole cannot be said to be obvious without some reason given in the prior art why one of ordinary skill in the art at the time of the invention would have been prompted to modify the teachings of a reference or combine the teachings of multiple references to arrive at the claimed invention.

The M.P.E.P. sets forth the strict legal standard for establishing a *prima facie* case of obviousness based on modification or combination of prior art references. "To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references where combined) must teach or suggest all the claim limitations." M.P.E.P. § 2142, 2143. The teaching, suggestion or motivation for the modification or combination and the reasonable expectation of success must both be found in the prior art and cannot be based on an applicant's disclosure. *See Id.* (citations omitted). "Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art" at the time of the invention. M.P.E.P. § 2143.01. Even the fact that references *can* be modified or combined does not render the resultant modification or combination obvious unless the prior art teaches or suggests the desirability of the modification or combination. *See Id.* (citations omitted). Moreover, "To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or

suggested by the prior art. All words in a claim must be considered in judging the patentability of that claim against the prior art." M.P.E.P. § 2143.03 (citations omitted).

The governing Federal Circuit case law makes this strict legal standard even more clear.[1] According to the Federal Circuit, "a showing of a suggestion, teaching, or motivation to combine or modify prior art references is an essential component of an obviousness holding." *In re Sang-Su Lee*, 277 F.3d 1338, 1343, 61 U.S.P.Q.2d 1430, 1433 (Fed. Cir. 2002) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 U.S.P.Q.2d 1456, 1459 (Fed. Cir. 2000)). "Evidence of a suggestion, teaching, or motivation . . . may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to be solved." *In re Dembiczak*, 175 F.3d 994, 999, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). However, the "range of sources available . . . does not diminish the requirement for actual evidence." *Id.* Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." *In re Mills*, 916 F.2d at 682, 16 U.S.P.Q.2d at 1432. *See also In re Rouffet,* 149 F.3d 1350, 1357, 47 U.S.P.Q.2d 1453, 1457-58 (Fed. Cir. 1998) (holding a *prima facie* case of obviousness not made where the combination of the references taught every element of the claimed invention but did not provide a motivation to combine); *In Re Jones*, 958 F.2d 347, 351, 21 U.S.P.Q.2d 1941, 1944 (Fed. Cir. 1992) ("Conspicuously missing from this record is any evidence, other than the PTO's speculation (if that can be called evidence) that one of ordinary skill in the herbicidal art would have been motivated to make the modification of the prior art salts necessary to arrive at" the claimed invention.). Even a determination that it would have been obvious to one of ordinary skill in the art at the time of the invention to try the proposed modification or combination is not sufficient to establish a *prima facie* case of obviousness. *See In re Fine*, 837 F.2d 1071, 1075, 5 U.S.P.Q.2d 1596, 1599 (Fed. Cir. 1988).

In addition, the M.P.E.P. and the Federal Circuit repeatedly warn against using an applicant's disclosure as a blueprint to reconstruct the claimed invention. For example, the M.P.E.P. states, "The tendency to resort to 'hindsight' based upon applicant's disclosure is

[1] Note M.P.E.P. 2145 X.C. ("The Federal Circuit has produced a number of decisions overturning obviousness rejections due to a lack of suggestion in the prior art of the desirability of combining references.").

often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art." M.P.E.P. § 2142. The governing Federal Circuit cases are equally clear. "A critical step in analyzing the patentability of claims pursuant to [35 U.S.C. § 103] is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. . . . Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one 'to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher.'" *In re Kotzab,* 217 F.3d 1365, 1369, 55 U.S.P.Q.2d 1313, 1316 (Fed. Cir. 2000) (citations omitted). In *In re Kotzab*, the Federal Circuit noted that to prevent the use of hindsight based on the invention to defeat patentability of the invention, the court requires the Examiner to show a motivation to combine the references that create the case of obviousness. *See id. See also, e.g., Grain Processing Corp. v. American Maize-Products,* 840 F.2d 902, 907, 5 U.S.P.Q.2d 1788, 1792 (Fed. Cir. 1988). Similarly, in *In re Dembiczak*, the Federal Circuit reversed a finding of obviousness by the Board, explaining that the required evidence of such a teaching, suggestion, or motivation is essential to avoid impermissible hindsight reconstruction of an applicant's invention:

> Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d at 999, 50 U.S.P.Q.2d at 1617 (emphasis added) (citations omitted).

C. The Henson Reference

Henson discloses "a web-based online store that includes a configurator, a cart, a checkout, and a database." (Abstract) "[A] user interface of the online store enables a custom configuration of a computer system according to an identification of a user belonging to a

prescribed customer set." (Abstract) "The configurator is provided for configuring a computer system with options selected according to a prescribed user input, the options and a respective pricing for each option being presented on a configurator web pate in accordance with the identification of the user belonging to a prescribed customer set." (Abstract) "[A] lead time delay indicator provides the customer with an indication that a particular chosen option and/or combination of options will result in a shipment delay, and may further include an indication of a certain amount of time for a delay. In other words, the shipment delay indicator provides the customer with advance notice that a particular selected option or options will result in a shipment delay." (Column 7, lines 2-9)

D. The Rhythm Reference

Rhythm discloses "an order promising solution that improves customer service levels and profitability by enabling companies to confidently make delivery promises to their customers." (Page 3) "It does so by providing visibility into the complete demand/fulfillment cycle from the sourcing and procurement of raw materials through manufacturing, transportation, and distribution to customers." (Page 3) "To make a significant impact on customer service levels, companies require different order promising strategies based upon the operational characteristics of the enterprise supply chain, business unit, the product family or SKU level, or specific customer needs." (Page 3)

E. Group 1 (Claims 1-4, 6-9, and 28-43)

Claims 1-4, 6-9, and 28-43 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Henson* in view of *Rhythm*. Appellants respectfully submit that Claims 1-4, 6-9, and 28-43 are clearly patentable over the proposed *Henson-Rhythm* combination.

Claims 1-4, 6-9, and 28-43 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially different from limitations recited in other claims.

1. Even when combined, the references clearly fail to disclose, teach, or suggest limitations recited in the claims

The Examiner acknowledges that the primary reference *Henson* does not disclose the "dynamically applied optimization features" recited in Appellants' claims. (Final Office Action, page 2) Not only does *Henson* "not specifically mention some of" the recited dynamically applied optimization features as the Examiner states, but as demonstrated during prosecution and below, *Henson* fails to disclose, teach, or suggest in any manner whatsoever the recited dynamically applied optimization features.

Furthermore, also as demonstrated during prosecution and below, the secondary reference *Rhythm* merely mentions optimization in the context of supply chain management activities such as planning and scheduling. (*See, e.g.*, Pages 1 ("*solutions*"), 6-7 ("*advanced scheduling*"), 15 ("*distribution planning*"), 19-20 ("*manufacturing planning*")) The only portion of the *Rhythm* reference even marginally related to configuring a product, entitled "*order promising*," is entirely devoid of any mention of optimization. (*See* Page 3 ("*order promising*")) The Examiner's summary conclusion that the order promising solution as disclosed in the *Rhythm* reference "allows companies to model and implement their business rules using a wide range of constraint[s] to achieve optimization" lacks any basis in the *Rhythm* reference and, in any case, clearly fails to make up for the deficiencies of the primary reference *Henson*.

As made clear in Appellants' claims and during prosecution, it is not any particular optimization functions that Appellants seek to patent, but instead the dynamic application of an optimization function, with respect to each item in each of a series of selection options sets during a product configuration session, according to data received from an available-to-promise engine during the product configuration session, to identify an item of each selection option set as a default selection that is optimal among the one or more items of the selection option set with respect to the dynamically applied optimization function. Even if it would have been technologically possible at the time of Appellants' invention to combine *Rhythm* with *Henson*, which Appellants dispute as discussed below, and even if there was the required teaching, suggestion, or motivation to do so, which Appellants also dispute as

discussed below, the proposed *Henson-Rhythm* combination would still provide no disclosure, teaching or suggestion of at least the following limitations, in combination, as specifically recited in independent Claim 1 (and similarly in independent Claims 28 and 36):

- ***during a product configuration session***
- ***for each of a series of selection option sets***
- ***dynamically applying an optimization function with respect to each item in the selection option set***
- ***according to data received from an available-to-promise engine during the product configuration session***
- ***to identify an item of the selection option set as a default selection***
- ***the default selection being optimal among the one or more items of the selection option set with respect to the dynamically applied optimization function***

In the "Response to Arguments" section of the Final Office Action, the Examiner states that the third of the claim limitations set forth above, "***dynamically applying an optimization function with respect to each item in the selection option set***," is disclosed in the *Rhythm* reference at Page 7. (Final Office Action, Page 3) However, the only mentions of optimization, optimizer, optimal, or the like on Page 7 of the *Rhythm* reference, in a section entitled "*advanced scheduling*," have nothing whatsoever to do with items in a selection option set presented to a user during a product configuration session:

- "RHYTHM uses an automatic schedule builder and global optimizer, based on genetic algorithms, to quickly generate high-quality schedules from complex data. Genetic algorithm technology allows RHYTHM to solve complex scheduling scenarios with many different constraints that cannot be solved with traditional optimizers." (Page 7, ¶ 1)
- "RHYTHM employs an extremely fast constraint-computation engine, which supports global optimization, interactive scheduling, fast rescheduling, and what-if planning." (Page 7, ¶ 2)

Other portions of the "*advanced scheduling*" section of the *Rhythm* reference, and all other sections of the *Rhythm* reference in which optimization or the like is mentioned, are similarly devoid of any relationship to items in a selection option set presented to a user during a product configuration session.

In the Advisory Action, the Examiner misstates and oversimplifies Appellants' arguments. Appellants do not merely contend that neither *Henson* nor *Rhythm* mention the word optimum or its derivatives, although it is true that they do not. Rather, Appellants have amply demonstrated that neither *Henson* nor *Rhythm*, whether considered separately or in combination, discloses, teaches, or suggests the dynamic application of an optimization function with respect to each item of a selection option set during a product configuration session. In the Advisory Action, the Examiner relies on a portion of the *Rhythm* reference that states, "RHYTHM, on the other hand, generates a constraint-driven plan that simultaneously accounts for demand, material, and capacity and continually adjusts the plan based on the changing dynamics of the supply chain. Because it considers all dynamic elements that determine the actual total lead time, it results in an accurate, constraint-based plan that forms the basis to quote reliable promise dates." First, Appellants dispute that this excerpt discloses, teaches, or suggests applying any optimization function. Second, like the other portions of *Rhythm* relied upon by the Examiner at various times during prosecution, this portion of *Rhythm* has nothing whatsoever to do with items in a selection option set presented to a user during a product configuration session.

For at least these reasons, the *Rhythm* reference is plainly insufficient to meet the third of the limitations set forth above, "***dynamically applying an optimization function with respect to each item in the selection option set***," which the Examiner acknowledges is also absent from *Henson*. Independent Claim 1 is allowable for at least this reason.

Also in the Examiner's "Response to Arguments," the Examiner states that the fourth of the claim limitations set forth above, dynamically applying an optimization function with respect to each item in the selection option set "***according to data received from an available-to-promise engine during the configuration session***," is disclosed in the *Rhythm* reference at Pages 3-4. (Final Office Action, Page 3) The *Rhythm* reference merely discloses the use of available-to-promise functionality in a section entitled "*order promising*" that contains no disclosure, teaching, or suggestion whatsoever of optimization, optimizer, optimal, or the like. This disclosure in the *Rhythm* reference is wholly insufficient to meet the fourth of the limitations set forth above, dynamically applying an optimization function with respect to each item in the selection option set "***according to data received from an***

available-to-promise engine during the configuration session," which the Examiner acknowledges is also absent from *Henson*. Independent Claim 1 is also allowable for at least this reason.

Also in the Examiner's "Response to Arguments," the Examiner states that the fifth of the claim limitations set forth above, dynamically applying an optimization function with respect to each item in the selection option set "***to identify an item of the selection option set as a default selection***," is disclosed in the *Rhythm* reference at Page 19. (Final Office Action, Page 3) However, the only mentions of optimization, optimizer, optimal, or the like on Page 19 of the *Rhythm* reference, in a section entitled "*manufacturing planning*," have nothing whatsoever to do with items in a selection option set presented to a user during a product configuration session:

- "Infinite capacity planning is an important step in formulating an optimal, finite capacity plan." (Page 19, ¶ 2)
- "However the user also has the choice of using RHYTHM's constraint-based, load-balancing algorithms to automatically create an optimal finite capacity constrained plan." (Page 19, ¶ 2)

Other portions of the "*manufacturing planning*" section of the *Rhythm* reference, and all other sections of the *Rhythm* reference in which optimization or the like is mentioned, are similarly devoid of any relationship to items in a selection option set presented to a user during a product configuration session. The *Rhythm* reference is plainly insufficient to meet the fifth of the limitations set forth above, dynamically applying an optimization function with respect to each item in the selection option set "***to identify an item of the selection option set as a default selection***," which the Examiner acknowledges is also absent from *Henson*. Independent Claim 1 is also allowable for at least this reason.

Also in the Examiner's "Response to Arguments," the Examiner states that the sixth of the claim limitations set forth above, dynamically applying an optimization function with respect to each item in the selection option set to identify an item of the selection option set as a default selection, "***the default selection being optimal among the one or more items of the selection option set with respect to the dynamically applied optimization function***," is disclosed in the *Rhythm* reference at Pages 7, 18, and 19. (Final Office Action, Page 4)

However, as shown above, the only mentions of optimization, optimizer, optimal, or the like on Pages 7 and 19 of the *Rhythm* reference have nothing whatsoever to do with items in a selection option set presented to a user during a product configuration session. Similarly, the only mentions of optimization, or the like on Page 18 of the *Rhythm* reference, in the section entitled "*manufacturing planning*," have nothing whatsoever to do with items in a selection option set presented to a user during a product configuration session:

- "i2 Technologies' solution for manufacturing planning takes a global approach to intelligently optimize the performance of a manufacturing operation." (Page 18, ¶ 1)
- "RHYTHM manages complex manufacturing operations that involve large numbers of resources and operational steps in real time, as well as solves common planning problems found in factories, such as managing complex bills of material, alternate routings, and optimizing machine setup sequences." (Page 18, ¶ 2)
- "The RHYTHM Manufacturing Planning solution can be used in conjunction with Advanced Scheduling to determine the optimal sequence of operations at each resource." (Page 18, ¶ 2)

As discussed above, other portions of the "*advanced scheduling*" and "*manufacturing planning*" sections of the *Rhythm* reference, and all other sections of the *Rhythm* reference in which optimization is mentioned, are similarly devoid of any relationship to items in a selection option set presented to a user during a product configuration session. The *Rhythm* reference is plainly insufficient to meet the sixth of the limitations set forth above, dynamically applying an optimization function with respect to each item in the selection option set to identify an item of the selection option set as a default selection, "***the default selection being optimal among the one or more items of the selection option set with respect to the dynamically applied optimization function***," which the Examiner acknowledges is also absent from *Henson*. Independent Claim 1 is also allowable for at least this reason.

Examples of the dynamic nature of the optimization function recited in independent Claim 1 are provided in dependent Claims 7-9, which recite as particular examples defining the optimization function "during the configuration session" (Claim 7), "in response to an identification of the user during the configuration session" (Claim 8), and "in response to a product selection decision made by the user during the configuration session" (Claim 9). In the Examiner's "Response to Arguments," the Examiner refers to alleged disclosure of these

limitations in the *Henson* and *Rhythm* references. (Final Office Action, Page 4) However, for reasons similar to those discussed above with respect to the third, fifth, and sixth limitations set forth above, these references are plainly insufficient.

2. The proposed combination of references is improper

With respect to the Examiner's proposed combination of *Rhythm* with *Henson*, the Examiner has not shown anything in *Henson, Rhythm* or in the knowledge generally available to those of ordinary skill in the art at the time of the invention that would have taught, suggested, or motivated one of ordinary skill in the art at the time of the invention to combine these references in the manner the Examiner proposes. As discussed above, even if all elements of a claim are disclosed in various prior art references, which is certainly not the case here as discussed above, the claimed invention taken as a whole cannot be said to be obvious without some reason given in the prior art why one of ordinary skill in the art at the time of the invention would have been prompted to modify the teachings of a reference or combine the teachings of multiple references to arrive at the claimed invention. To avoid burdening the Board, Appellants have chosen not to repeat the entirety of Section I.B. here. Appellants trust the Board is fully aware of the strict legal standard the Examiner must satisfy. The mere possibility that the teachings of one reference -- *Rhythm* -- might improve the teachings of another reference -- *Henson* --, as the Examiner asserts, does not even remotely provide the required teaching, suggestion, or motivation to combine these references.

The Examiner's summary conclusion at Page 3 of the Final Office Action that it would have been obvious to one of ordinary skill in the art at the time of Appellants' invention to include optimization capabilities disclosed in the *Rhythm* reference in the system disclosed in *Henson*, "because this would increase the likelihood of promised delivery dates being met and increase customer satisfaction," is not supported by any teaching, suggestion, or motivation in *Henson*, the *Rhythm* reference, or knowledge generally available to those of ordinary skill in the art at the time of Appellants' invention. As an example, the Examiner argues that the system disclosed in *Henson* "is improved" when the capabilities disclosed in the *Rhythm* reference "are added to present an optimized product configuration," citing to

auto-resolution methods for resolving distribution planning problems as disclosed at Page 16 of the *Rhythm* reference. (Final Office Action, Page 6) The mention of auto-resolution methods for resolving distribution planning problems fails to teach, suggest, or motivate in any manner whatsoever combining the teachings of *Henson* and the *Rhythm* reference. Since the Examiner has not provided a sufficient teaching, suggestion, or motivation in the prior art, the Examiner's conclusion of obviousness is improper under the M.P.E.P. and governing Federal Circuit case law.

3. The Examiner has used improper hindsight reconstruction

In the Examiner's "Response to Arguments," the Examiner argues that his hindsight reconstruction of Appellants' invention is proper "so long as it takes into account only knowledge that was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure," citing a 1971 CCPA case. (Final Office Action, Pages 5) However, Appellants respectfully submit that the M.P.E.P. and governing Federal Circuit case law summarized above clearly prohibit the hindsight reconstruction the Examiner has employed in making these rejections. To reiterate the pronouncement of the Federal Circuit provided in Section I.B. above:

> Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d at 999, 50 U.S.P.Q.2d at 1617 (emphasis added) (citations omitted). Appellants respectfully submit that the Examiner has employed the type of hindsight reconstruction explicitly forbidden by the M.P.E.P. and Federal Circuit.

For at least these reasons, the Examiner failed to show that the *Henson-Rhythm* combination discloses, teaches, or suggests limitations specifically recited in independent Claims 1, 28, and 36. Independent Claims 1, 28, and 36 and their respective dependent

claims are therefore patentable over the *Henson-Rhythm* combination. Appellants respectfully submit that these rejections are improper and should be reversed by the Board.

G. Group 2 (Claims 10-27)

Claims 10-27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Henson* in view of *Rhythm*. Appellants respectfully submit that Claims 10-27 are clearly patentable over the proposed *Henson-Rhythm* combination.

Claims 10-27 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially different from limitations recited in other claims.

Even if it would have been technologically possible at the time of Appellants' invention to combine *Rhythm* with *Henson*, which Appellants dispute as discussed above and reiterate here, and even if there was the required suggestion or motivation to do so, which Appellants also dispute as discussed above and reiterate here, the proposed *Henson-Rhythm* combination would still provide no disclosure, teaching, or suggestion of each limitation of Appellants' claims.

As a first example, Appellants' independent Claim 10 recites "***during the configuration session, for each of the selection option sets, identifying as a default selection an item that provides an optimized result according to a selected optimization function dynamically applied with respect to each item in the selection option set according to the data received from the available-to-promise engine during the configuration session***." Similar limitations are recited in independent Claim 20. For reasons similar to those discussed above with regard to independent Claims 1, 28, and 36, the proposed *Henson-Rhythm* combination fails to disclose, teach, or suggest the particular combinations of limitations specifically recited in these independent claims.

As a further example, Appellants' independent Claim 10 also recites "***for each selection option set, before presenting the selection option set to the user, determining which of the items of the selection option set are actually available to the user in***

accordance with a user-specified date constraint and presenting only those items of the selection option set which are actually available to the user in accordance with the user-specified date constraint." Similar limitations are recited in independent Claim 20 and dependent Claims 2, 31, and 39. As discussed above, *Henson* discloses providing to the user a warning indicator to indicate an option which, if already selected or selected in the future by the user, would represent an invalid configuration or would adversely impact a shipment or delivery date of the configured product. Using the system disclosed in *Henson*, as clearly illustrated in Figure 4 of *Henson*, the user is presented with all options and remains free to at least initially select any of these options. As just a few examples, *Henson* discloses the following:

> • The validation module provides validation of some form with respect to the customer built configuration. The shipment delay indicator provides the customer with any lead time warnings or shipment delays which would occur as a result of the selection of specific options. (Column 6, lines 36-38)
>
> • With respect to the lead time or shipment delay module 32, a long lead time warning is provided with the use of a warning icon. . . . The warning icon is presented to the online shopper upon the selection of a system option that has been identified as having a significant impact on the time to delivery of the system of interest. The warning icon and associated messaging are made present in the configurator once an update/refresh of the web page has been requested, for example, through clicking on any of a number of store navigation or action buttons. The presentation of the warning is in two parts. A first part includes a general alert 80 to the presence of any number of potentially problematic options, the general alert being displayed on the web page, for example near the top of the page. Secondly, a long lead time icon 82 is displayed adjacent to each long lead time option's position in the configurator. Options are manually identified as worthy of a long lead time warning via entry of a flag in an item master record of the store product database 24. Online shoppers can click on the warning icon and receive a manually-maintained listing of all items currently marked as significantly extending system delivery with an estimated time to delivery. (Column 6, lines 44-67)
>
> • [A] lead time delay indicator provides the customer with an indication that a particular chosen option and/or combination of options will result in a shipment delay, and may further include an indication of a certain amount of time for a delay. In other words, the shipment delay indicator provides the customer with advance notice that a particular selected option or options will result in a shipment delay. (Column 7, lines 2-9)

- The shipment or lead time delay indicator of the present embodiment advantageously provides an advance or early indication to the customer of a potential shipment delay which could occur as a result of having selected a particular option. The customer thus does not have to wait until after having submitted the order, but rather can find out about any shipment delays as the customer is configuring and/or building his particular computer system online. (Column 7, lines 13-20)

- The on-line store further includes validation of a configuration built by a customer. Validation (or compatibility) provides the customer with a validation message indicating an occurrence of when the options selected for a particular system are not correct. If the options selected for a particular system will adversely affect the shipment of the configured system, then a warning message is issued to enable the user to modify options accordingly. In other words, the validation enhancement lets the customer know when one or more options are not compatible for one reason or another. The validation enhancement includes built-in logic which checks the particular configuration built by the customer and indicates whether or not the selected options can be built together for the particular configuration. If two or more options are incompatible, then in one embodiment, the validation enhancement returns a message indicating that the options are incompatible, as further referenced herein. (Column 7, line 52 – Column 8, line 6)

- With respect to validation 34, a system option compatibility warning is issued, similar to the long lead time warning. . . . The system option compatibility warning icon is presented to the online shopper when a system option identified as having an incompatibility with another system option is recognized as a customer selection. Again, the warning icon and associated messaging are made present in the configurator once an update/refresh of the web page has been requested, for example, through the clicking on any of a number of store navigation or action buttons. The presentation of the warning is in two parts. First, a general alert 84 to the presence of any number of potentially problematic system options is displayed on the web page, for example, near the top of the page. Secondly, an option compatibility icon 86 is displayed adjacent to each potentially incompatible option's position in the configurator. (Column 8, lines 7-24)

- Validation of a customer built system assists in increasing a customer order compliance on the part of the on-line store. Those orders which do not comply (i.e., orders for systems which for one reason or another cannot physically be built) are advantageously managed down to a significantly lowered percentage of occurrences than previously achievable. Customers of the on-line store application thus receive advance warning when an option will not work for a given configuration. The customer can then modify, change, and/or delete the particular option which gave rise to the validation warning. (Column 8, lines 45-55)

- In operation, the online store includes an ability to recognize which customer set that a customer who accesses the online store is in, i.e., upon accessing the welcome page of the online store. Upon a recognition of the customer belonging to a particular customer set, the customer gets a store specific to the given customer. Customer set refers to a particular company, organization or individual, thus there can be many customer sets. Part of the store differences is that the configurator determines what part of the online store does the customer get to see. The welcome page defines what products does the store allow the customer to see. The configurator determines which options the customer is allowed to look at within a given system (as chosen per the welcome page), merchandising options, what are allowed options, etc. (Column 14, lines 4-18)

- The underlying feature here is that a flag is being set to indicate that the selection of a particular option will result in a lead time greater than a normal lead time, according to a particular customer set.

  One difference between a compatibility warning (green check mark) and a long lead time warning (yellow exclamation mark) is that the option compatibility warning preferably provides an option compatibility warning message that is not generic. In other words, the option compatibility warning is preferably specific to the option or options which the user has selected. The long lead time warning indicates that there is an option on a long lead time. The long lead time warning preferably includes an icon and a message at a general level (e.g., "there are four warnings below") at a prominent location on the web page. A user would then scroll down the web page to find out which of the selections have long lead time warnings. For each option with a long lead time icon, the icon may be accompanied with a warning message that is specific to that option. (Column 15, lines 5-24)

The *Rhythm* reference plainly fails to make up for the deficiencies of *Henson*. As an example, the Examiner argues that the system disclosed in *Henson* "is improved" when the capabilities disclosed in the *Rhythm* reference "are added to present an optimized product configuration," citing to auto-resolution methods for resolving distribution planning problems as disclosed at Page 16 of the *Rhythm* reference. (Final Office Action, Page 6) However, auto-resolution methods for resolving distribution planning problems are not related in any manner whatsoever to the deficiencies of *Henson* discussed above.

For at least these reasons, the Examiner has failed to show that the *Henson-Rhythm* combination discloses, teaches, or suggests certain limitations specifically recited in independent Claims 10 and 20. Independent Claims 10 and 20 and their respective dependent

claims are therefore patentable over the proposed *Henson-Rhythm* combination. Appellants respectfully submit that these rejections are improper and should be reversed by the Board.

Conclusion

Appellants have demonstrated that the present invention, as claimed, is clearly distinguishable over the prior art cited by the Examiner. Therefore, Appellants respectfully request the Board to reverse the final rejections and instruct the Examiner to issue a Notice of Allowance with respect to all pending claims.

Appellants have enclosed a check in the amount of $330.00 for this Appeal Brief. Appellants believe no additional fees are due. However, the Commissioner is hereby authorized to charge any additional fees and credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

BAKER BOTTS L.L.P.
Attorneys for Appellants

Christopher W. Kennerly
Reg. No. 40,675

Date: May 3, 2004

Correspondence Address:

Customer Number: **05073**

Appendix A

1. (Previously Presented) A method for configuring a product, comprising:

initiating a configuration session in which a user configures a product comprising a configuration of items selected from a plurality of items;

generating a series of selection option sets, each selection option set comprising one or more items;

during the configuration session, for each of the series of selection option sets, receiving data from an available to promise engine regarding the one or more items in the selection option set;

during the configuration session, for each of the series of selection option sets, dynamically applying an optimization function with respect to each item in the selection option set according to the data received from the available to promise engine during the configuration session to identify an item of the selection option set as a default selection, the default selection being optimal among the one or more items of the selection option set with respect to the dynamically applied optimization function;

providing for presentation to the user the series of selection option sets, each selection option set comprising its identified default selection;

accepting from the user a selection of an item for each of the series of selection option sets; and

determining a configuration for the product in accordance with the selections of the items from the series of selection option sets.

2. (Previously Presented) The method of Claim 1, wherein each selection option set presented to the user is checked before presentation to confirm that all items in the selection option set are actually available to the user in accordance with a user-specified date constraint.

3. (Previously Presented) The method of Claim 1, wherein identifying an item of the selection option set as a default selection comprises identifying the item that provides an optimized fit according to the optimization function.

4. (Previously Presented) The method of Claim 1, wherein the optimization function maximizes manufacturer profit.

5. (Canceled)

6. (Previously Presented) The method of Claim 1, wherein the optimization function minimizes price to the user.

7. (Previously Presented) The method of Claim 1, wherein the optimization function is defined during the configuration session.

8. (Previously Presented) The method of Claim 1, wherein the optimization function is defined in response to an identification of the user during the configuration session.

9. (Previously Presented) The method of Claim 1, wherein the optimization function is defined in response to a product selection decision made by the user during the configuration session.

10. (Previously Presented) A method for configuring a product, comprising:

providing for presentation to a user during a configuration session a series of selection option sets, each selection option set comprising one or more items;

during the configuration session, for each of the series of selection option sets, receiving data from an available to promise engine regarding the one or more items in the selection option set;

during the configuration session, for each selection option set, before presenting the selection option set to the user, determining which of the items of the selection option set are actually available to the user in accordance with a user-specified date constraint and presenting only those items of the selection option set which are actually available to the user in accordance with the user-specified date constraint;

during the configuration session, for each of the selection option sets, identifying as a default selection an item that provides an optimized result according to a selected optimization function dynamically applied with respect to each item in the selection option set according to the data received from the available-to-promise engine during the configuration session; and

for each selection option set, accepting a selection of an item from the user.

11. (Previously Presented) The method of Claim 10, further comprising:

before any selection option sets are presented to the user, defining configuration information to provide the series of selection option sets to be presented to configure the product; and

within the determining step, determining which of the items in the defined configuration information are actually available to the user.

12. (Previously Presented) The method of Claim 11, further comprising:

as selections are made by the user, adding one or more constraints to later presented selection option sets; and

within the determining step, determining which of the items in the defined configuration information meet the one or more constraints added by user selections and are actually available to the user.

13. (Previously Presented) The method of Claim 10, wherein the selected optimization function is selected during the configuration session with the user in which the product configuration is performed.

14. (Previously Presented) The method of Claim 13, wherein the selected optimization function is selected as a function of an identity of the user during the configuration session.

15. (Previously Presented) The method of Claim 13, wherein the selected optimization function is selected by the user during the configuration session.

16. (Previously Presented) The method of Claim 10, wherein the default selection provides an optimized result according to a second optimization function in addition to the selected optimization function.

17. (Previously Presented) The method of Claim 10, wherein the selected optimization function comprises a function which minimizes price to the user.

18. (Previously Presented) The method of Claim 10, wherein the selected optimization function comprises a function which maximizes profit to a manufacturer.

19. (Previously Presented) The method of Claim 10, wherein the selected optimization function comprises a function which minimizes time to delivery of the product.

20. (Previously Presented) A system for configuring a product, comprising:

a configuration engine operable to, during a configuration session:

communicate with a user interface operable to display a plurality of lists of items to a user and to accept a plurality of selections from the user, each list comprising one or more items, each list comprising a default item; and

generate the lists of items according to stored configuration information; and

an available to promise engine operable to:

store information regarding availability of the items in the lists of items generated by the configuration engine; and

during the configuration session, for each list of items generated by the configuration engine, return to the configuration engine a sub-list of one or more of the items which are actually available to the user in accordance with a user-specified date constraint;

during the configuration session, for each of the one or more items in the sub-list which are actually available to the user in accordance with the user-specified date constraint, return to the configuration engine data regarding the item to enable dynamic application of an optimization function with respect to the item;

the default item for each list being determined during the configuration session by dynamically applying an optimization function to each item in the returned sub-list of one or more items which are actually available to the user in accordance with the user-specified date constraint, the optimization function being dynamically applied to the item according to the returned data regarding the item, the default item for each list being optimal among the one or more items in the returned sub-list with respect to the dynamically applied optimization function.

21. (Previously Presented) The system of Claim 20, wherein the configuration engine is operable to determine one or more of the lists of items in response to selections made by the user during the configuration session.

22. (Previously Presented) The system of Claim 21, wherein the configuration engine is operable to apply the optimization function to the sub-list of actually available items returned from the available to promise engine.

23. (Previously Presented) The system of Claim 21, wherein the available to promise engine is operable to:

apply the optimization function to the items which are actually available before returning the sub-list to the configuration engine; and

identify the default item when the sub-list of actually available items is returned.

24. (Previously Presented) The system of Claim 21, wherein:

for each list of items to be displayed to the user, the configuration engine is operable to pass to the available to promise engine a list of proper configuration items; and

for each list of proper configuration items, the available to promise engine is operable to:

determine which items are actually available to the user;

apply the optimization function to each actually available item; and

return to the configuration engine a sub-list of actually available items and an identification of which actually available item best matches the optimization function.

25. (Previously Presented) The system of Claim 20, wherein the optimization function comprises a function for minimizing product price.

26. (Previously Presented) The system of Claim 20, wherein the optimization function comprises a function for maximizing profits.

27. (Previously Presented) The system of Claim 20, wherein the optimization function comprises a function for minimizing delay until the product is available.

28. (Previously Presented) A method for configuring a product, comprising:

initiating a configuration session in which a user configures a product, the product comprising a configuration of items selected from a series of lists, each list comprising one or more items selected from a plurality of items;

during the configuration session, for each of the series of lists, receiving data from an available to promise engine regarding the one or more items in the list;

during the configuration session, for each of the series of lists, dynamically applying an optimization function with respect to each item in the list according to the data received from the available to promise engine during the configuration session to identify a default selection comprising an item of the list that optimizes the dynamically applied optimization function relative to any other items in the list;

providing for presentation to the user the series of lists each comprising the one or more items including the identified default selection for the list; and

determining a configuration for the product in accordance with the selection of items from the series of lists.

29. (Presently Presented) The method of Claim 28, further comprising repeating the following for each list of the series of lists until a last list is reached:

receiving from the user a selection of an item from a current list comprising one or more items;

generating a next list comprising one or more items in accordance with the selection of the item from the current list;

applying an optimization function with respect to each item in the next list to identify a default selection comprising an item of the next list that optimizes the optimization function relative to any other items in the next list; and

providing for presentation to the user the next list comprising the one or more items including the identified default selection for the next list.

30. (Previously Presented) The method of Claim 29, wherein generating the next list comprises:

determining a valid item configuration for the product in accordance with the selection of the item from the current list and in accordance with a constraint restricting selection of an item for the product; and

generating the next list comprising only one or more items of the valid item configuration.

31. (Previously Presented) The method of Claim 29, wherein generating the next list comprises:

determining one or more items of the next list that are actually available to the user in accordance with a user-supplied date constraint restricting selection of an item for the product; and

generating the next list comprising only the one or more items of the next list that are actually available to the user in accordance with the user-supplied date constraint restricting selection of an item for the product.

32. (Previously Presented) The method of Claim 28, wherein the optimization function comprises a function for minimizing product price.

33. (Previously Presented) The method of Claim 28, wherein the optimization function comprises a function for maximizing profits.

34. (Previously Presented) The method of Claim 28, wherein the optimization function is selected as a function of an identity of the user.

35. (Previously Presented) The method of Claim 28, wherein the optimization function is selected by the user.

36. (Previously Presented) A system for configuring a product, the system comprising one or more software components embodied in computer-readable media that when executed are collectively operable to:

initiate a configuration session in which a user configures a product, the product comprising a configuration of items selected from a series of lists, each list comprising one or more items selected from a plurality of items;

during the configuration session, for each of the series of lists, receiving data from an available to promise engine regarding the one or more items in the list;

during the configuration session, for each of the series of lists, dynamically apply an optimization function with respect to each item in the list according to the data received from the available to promise engine during the configuration session to identify a default selection comprising an item of the list that optimizes the dynamically applied optimization function relative to any other items in the list;

provide for presentation to the user the series of lists each comprising the one or more items including the identified default selection for the list; and

determine a configuration for the product in accordance with the selection of items from the series of lists.

37. (Previously Presented) The system of Claim 36, operable to repeat the following for each list of the series of lists until a last list is reached:

receiving from the user a selection of an item from a current list comprising one or more items;

generating a next list comprising one or more items in accordance with the selection of the item from the current list;

applying an optimization function with respect to each item in the next list to identify a default selection comprising an item of the next list that optimizes the optimization function relative to any other items in the next list; and

providing for presentation to the user the next list comprising the one or more items including the identified default selection for the next list.

38. (Previously Presented) The system of Claim 37, operable to generate the next list by:

determining a valid item configuration for the product in accordance with the selection of the item from the current list and in accordance with a constraint restricting selection of an item for the product; and

generating the next list comprising only one or more items of the valid item configuration.

39. (Previously Presented) The system of Claim 37, operable to generate the next list by:

determining one or more items of the next list that are actually available to the user in accordance with a user-supplied date constraint restricting selection of an item for the product; and

generating the next list comprising only the one or more items of the next list that are actually available to the user in accordance with the user-supplied date constraint restricting selection of an item for the product.

40. (Previously Presented) The system of Claim 36, wherein the optimization function comprises a function for minimizing product price.

41. (Previously Presented) The system of Claim 36, wherein the optimization function comprises a function for maximizing profits.

42. (Previously Presented) The system of Claim 36, wherein the optimization function is selected as a function of an identity of the user.

43. (Previously Presented) The system of Claim 36, wherein the optimization function is selected by the user.

2043.0983 RHYTHM

i2 Technologies

company
vision
innovation
technology
solutions
support
success

alliances
investors
events
jobs@i2
press

April 23, 1998

156% Earnings growth on record revenues in Q1 of 1998

i2 continues uninterrupted history of breaking quarterly revenue records

April 23, 1998

Board approves 2-for-1 stock split

Investor Relations - NEW

Visit the new Investor Relations website

1997 Online Annual Report - NEW

i2 is #1 in Forbes ASAP Top 100 Dynamic Companies

i2 Technologies, Inc. was awarded No. 1 spot in the software category of Forbes ASAP Top 100 Dynamic Companies list in the magazine's February 23, 1998 issue.
link to Forbes ASAP article

PLANET 98 - Mark your calendar!

PLANET 98 - The Supply Chain Summit will be held September 20-23 in Dallas, Texas - Home of i2 Technologies, to commemorate our 10th year!

visit the i2 store!

executive gifts, clocks & watches, clothing, office accessories, cups & mugs, sports gifts and more!

INDUSTRY CONFERENCES

Automotive and Industrial
May 14 | Detroit, MI

RECENT PRESS RELEASES

i2 and InterTrans Merge

i2, IBM and UEC offer joint supply chain solutions for Metals Industry

UNILEVER/Lipton licenses i2 Technologies' RHYTHM® Consumer Packaged Goods Solution

i2 Technologies' 1997 annual revenues top $200 million

(c) 1995 - 1998 i2 Technologies, Inc. All rights reserved.

Get the latest webware from Netscape or Microsoft

Main E-Mail Address: info@i2.com
or contact one of i2's offices worldwide.

Please e-mail comments and suggestions regarding this site.

BEST AVAILABLE COPY

OIPE JC124
MAY 0 3 2004
PATENT & TRADEMARK OFFICE

i2 Technologies *the intelligent solution for global supply chain management*

company
vision
innovation
technology
solutions
support
success

alliances
investors
events
jobs@i2
press

solutions

RHYTHM solutions

i2 provides a comprehensive solution for supply chain planning and optimization. Using the supply chain activities of buy, make, move, store, and sell, this graphic shows how the RHYTHM product suite maps to the planning funnel.

Solutions for Logistics

i2 Technologies and its RHYTHM suite of products provide integrated decision support and planning capabilities for shared logistics providers.

service and support

consulting
technology transfer
technical support

alliances

industry focus

industry-specific RHYTHM models
industry-specific product development

i2's solutions for...

advanced scheduling

data integration

demand planning

distribution planning

manufacturing planning

order promising

transportation planning

(c) Copyright i2 Technologies, Inc. 1995 - 1998. All rights reserved.

RECEIVED
MAY 1 0 2004
GROUP 3600

2

http://web.archive.org/web/19980526040332/www.i2.com/html/solutions.htm 1

i2 Technologies

home

back to solutions

company
vision
innovation
technology
solutions
support
success

alliances
investors
events
jobs@i2
press

RHYTHM®

order promising

In today's global marketplace, companies are under tremendous pressure to increase service levels while lowering costs—despite the fact that increasing product variability and volatility make this challenge even more difficult. To effectively compete, enterprises need to make accurate delivery promises and be able to meet them. Often, it is the lack of detailed visibility into supply chain operations that prevents companies from quoting accurate dates and meeting customer orders on time. RHYTHM's Order Promising solution improves customer service levels and profitability by enabling companies to confidently make delivery promises to their customers. It does so by providing visibility into the complete demand/fulfillment cycle from the sourcing and procurement of raw materials through manufacturing, transportation, and distribution to customers.

solutions for...

advanced scheduling

data integration

demand planning

distribution planning

manufacturing planning

order promising

transportation planning

how does RHYTHM fit your specific business needs?

Today's need for sophisticated order promising capabilities have evolved far beyond the traditional definition of ATP (available-to-promise). Since enterprises employ diverse approaches to how they determine and promise orders to customers, the RHYTHM Order Promising solution can be deployed in many different ways to support the unique requirements of the business. This level of flexibility offered by RHYTHM is far superior to competitive solutions that require the business to conform to a single, specific ATP strategy supported by the solution provider. To make a significant impact on customer service levels, companies require different order promising strategies based upon the operational characteristics of the enterprise supply chain, business unit, the product family or SKU level, or specific customer needs. The speed and flexibility of RHYTHM's Order Promising solution is a reflection of the powerful modeling capabilities supported by the underlying object architecture.

how does RHYTHM support your global sales organization?

When used as a global ATP server, RHYTHM is a powerful tool that enables the sales organization to have global visibility into the availability of inventory across the supply chain and to work with real-time, accurate information. In this scenario, RHYTHM interfaces to large-scale ERP order management systems to provide accurate quotes in sub-seconds, the RHYTHM server then runs continuously to

3

support a global sales organization that can access the ATP server 24 hours a day, 7 days a week. Because of its memory-resident architecture, it can efficiently process more than 100 requests per second.

key capabilities of RHYTHM order promising

knowing what your supply chain can actually deliver

Traditional ATP mechanisms are ineffective because they often rely on estimates to produce delivery date quotations and generally, only support a material-based manufacturing strategy. RHYTHM, on the other hand, generates a constraint-driven plan that simultaneously accounts for demand, material, and capacity, and continually adjusts the plan based on the changing dynamics of the supply chain. Because it considers all the dynamic elements that determine the actual total lead time, it results in an accurate, constraint-based plan that forms the basis to quote reliable promise dates.

increased control over how customer demands are satisfied

RHYTHM can model complex sales organizations including channels, geographic regions, pricing categories, or any sales entity in detail to provide significant control over the demand fulfillment process. Each of these entities can forecast demand, commit to orders, set customer priorities, and manage allocations for all of the products under its domain of control. Since RHYTHM also models the entire hierarchical span of control, a sales entity can also manage the usage of allocations by its subordinate members using complex rules such as first-come first-serve, prioritized allocation, fair share, or any business rule specific to an industry. This flexibility of allocation techniques allows companies to significantly improve customer service levels and profitability.

visibility of product availability worldwide

RHYTHM continuously monitors consumption of orders against allocation. Thus, at any given time, it provides complete visibility of ATP quantities of finished goods and component inventory across all distribution centers and manufacturing plants worldwide. The global sales organization can have visibility to this global ATP whose granularity can be daily or as real-time as needed (or supported by the ERP infrastructure). With this capability, sales organizations can intelligently manage fluctuations or mismatches in demand and supply by moving available inventory from alternate sources other than their designated distribution centers or plants, in order to satisfy the customer order quantity and due date.

an extensive modeling environment that offers true flexibility

Because RHYTHM represents ATP at the component level,

http://web.archive.org/web/19980526040913/www.i2.com/html/i2_solutions_for_and

it can promise from both end-item availability and component availability when quoting due dates (commonly referred to as Capable-To-Promise). Additionally, RHYTHM's ability to implement source rules, i.e., entire order on time, partial delivery of order on time, all line items as early as possible in one delivery, and other variations, allows companies to model and implement their business rules more effectively.

delivery date monitoring

Once delivery date promises have been made, it is still necessary to monitor these dates throughout the production and logistics time frame to determine if unexpected events have occurred that will affect the delivery date promise. RHYTHM's delivery date monitoring capabilities include monitoring and managing increased and decreased availability, and reassigning allocations based on demand patterns.

(c) Copyright i2 Technologies, Inc. 1995 - 1998. All rights reserved.

home | back to solutions

< previous | next >

i2 Technologies

home

back to solutions

company
vision
innovation
technology
solutions
support
success

alliances
investors
events
jobs@i2
press

RHYTHM®

advanced scheduling

RHYTHM's advanced scheduling is the detailed synchronization of all production operations to meet customer goals and optimize resources. It determines the optimal sequence of jobs, taking into account a wide variety of highly realistic and detailed constraints. Scheduling determines the release schedule for the shop floor and generates detailed lists for order execution.

how does advanced scheduling differ from planning?

Whereas planning deals with aggregate quantities and longer time horizons, scheduling sequences individual orders to meet highly specific constraints. Planning coordinates overall supply and demand, while scheduling executes released orders. Finally, planning determines where to deploy inventory throughout the supply chain, whereas scheduling identifies how to meet customer finished goods requirements.

what is the goal of RHYTHM's solution for advanced scheduling?

RHYTHM allows manufacturers to drive operations based on actual orders, creating a pull-based production environment both in final assembly and back through feeder lines, component plants, and suppliers. It understands and weighs a broad range of constraints to generate accurate, executable schedules, to synchronize the supply chain, and to improve schedule accuracy and on-time delivery. By considering constraints in the factory, upstream supplier constraints, and downstream logistic constraints, it facilitates reliable supply chain relationships.

when is advanced scheduling employed?

Advanced scheduling is used where a high level of detail and highly accurate schedules are required to generate optimum production operations. This includes complex products, products with complicated manufacturing processes, and products with lots of models, configurations or variations. Typical applications include assembly line sequencing, job shop scheduling, and make-to-order manufacturing.

key capabilities of RHYTHM advanced scheduling

solutions for...

advanced scheduling

data integration

demand planning

distribution planning

manufacturing planning

order promising

transportation planning

6

automatic genetic algorithm-based optimization

RHYTHM uses an automatic schedule builder and global optimizer, based on genetic algorithms, to quickly generate high-quality schedules from complex data. Genetic algorithm technology allows RHYTHM to solve complex scheduling scenarios with many different constraints that cannot be solved with traditional optimizers. RHYTHM is also far more robust in the face of changes to constraints, data, or business goals. It makes possible user-modifiable constraints that can be changed easily without programming.

modeling of a wide range of constraints

RHYTHM employs an extremely fast constraint-computation engine, which supports global optimization, interactive scheduling, fast rescheduling, and what-if planning. Typical constraints include labor content, model sequencing and spacing, equipment capacities, shipping load optimization, material availability, marketing priorities, and logistics requirements. Users can define both strong constraints which cannot be violated or weak constraints ((scheduling preferences) to create not only *feasible* schedules, but *preferred* schedules.

intelligent support for interactive manual scheduling

RHYTHM employs an interactive, intelligent user interface for displays, scheduling results, and interacting with schedules. Highly dynamic and visual displays show schedules and orders in an intuitive format. If manual editing creates constraint violations, the violations are graphically highlighted in bright colors and explained in a nearby window.

tight integration with on-line systems

RHYTHM advanced scheduling includes a transaction-based client-server architecture which enables efficient deployment of multi-user and multi-plant scheduling and planning systems. RHYTHM interfaces with existing work order systems, execution and tracking systems to provide updated schedules based on actual completion times. It works well with existing MRP systems to coordinate and identify material shortages.

quick rescheduling and reaction to changes

RHYTHM reschedules quickly as conditions change. ``Graphical constraints" allow schedulers to quickly enter up-to-the-minute data, such as unplanned material shortages or production glitches. Minor problems can be handled with ``drag and drop" schedule editing. For major schedule disruptions, RHYTHM advanced scheduling can automatically reschedule and re-optimize production.

(c) Copyright i2 Technologies, Inc. 1995 - 1998. All rights reserved.

7

home | back to solutions
< previous | next >

http://web.archive.org/web/19980526040842/www.i2.com/html/i2_solutions_for_adv...

OIPE
MAY 0 3 2004
PATENT & TRADEMARK OFFICE

i2 Technologies

home

back to solutions

company
vision
innovation
technology
solutions
support
success

alliances
investors
events
jobs@i2
press

RHYTHM®

data integration

The broad scope of global supply chain management requires many applications to work together to provide a seamless solution. These applications include Enterprise Resource Planning (ERP) systems, order management systems, product configurators, Advanced Planning Systems (APS),), and execution systems such as Shop Floor Control and Freight Management. These elements represent some of the major components within an enterprise solution. As the leading provider of supply chain decision support and optimization systems, i2 Technologies recognizes that integration of its RHYTHM solution with various complementary technologies is critical to providing a meaningful and usable solution for its customers.

solutions for...

advanced scheduling

data integration

demand planning

distribution planning

manufacturing planning

order promising

transportation planning

what are different types of integration?

Full integration of the planning process can be achieved where the entire supply chain is always aware of the current state of demand and supply. Depending upon the scope of the specific planning application, integration can range from simple batch file transfers between applications to fully integrated planning and scheduling that includes a real-time exchange of data and decision support. Other considerations such as the number of data sources, control events regarding who initiates what process, and the availability of timely data also determine the integration strategy deployed.

what enabling technology is used for integration?

i2 Technologies' RhythmLink provides the enabling technology that allows the RHYTHM planning engine to integrate with partner applications and systems in order to deliver decision-support capabilities to users throughout the entire supply chain. The RhythmLink architecture offers:

flexibility
RhythmLink offers several integration options that allow enterprises to quickly deploy RHYTHM and accelerate the time-to-benefit. As the data and planning process become more sophisticated, the level of integration can be upgraded as well.

scalability
RhythmLink provides the capability to efficiently manage the huge volumes of data associated with large supply chains, as well as the number of users accessing it.

standards-based open environment

RECEIVED
MAY 1 0 2004
GROUP 3600

RhythmLink provides an integration environment that supports current and emerging technology standards in the areas of databases, object-oriented development, and distributed computing.

what types of applications or data sources can I integrate?

RhythmLink is a multi-tiered, client-server solution that provides a single graphical interface which speeds integration of data sources and enterprise applications. The data sources can be relational or non-relational databases, or contain various types of file structures. RhythmLink also allows other applications such as ERP systems and other partner applications to interact with RHYTHM through standard messaging technologies such as CORBA and DCOM. Partner applications with specific integration points such as SAP™, SSA, and Oracle can also be accommodated.

key capabilities of RHYTHM data integration

comprehensive database integration

RhythmLink utilizes popular middleware tools including SequeLink, EDA/SQL, and standards such as ODBC to access relational databases including Oracle, Informix, and others. Native database access to Oracle is also supported in addition to non-relational databases such as IMS, AS400, and other popular data sources. The data within these databases can be imported into or exported from RHYTHM based on triggering events or these transfers can be initiated on demand. Users can view the data within a RHYTHM model as though it were another relational database through ODBC-compliant clients. An Excel interface to directly view and manipulate planning information via a spreadsheets is also supported.

integration with ERP systems

RhythmLink supports closed-loop integration between the RHYTHM family of products and other ERP systems. The benefits of this tightly-coupled integration include:

- allowing users to enter information into one system and ensure the accessibility and accuracy of the same information across the other application, eliminating duplicate data entry,
- providing data entry and ownership at one point-the source module-and synchronization of reference (common) data as necessary in a business environment,
- allowing for real-time or near real-time planning and addressing rapidly changing environments and true ``what-if'' capability based on the current status of the supply chain,
- providing superior performance and the rapid transfer of data,

- providing interfaces that are predefined, and that do not need to be rewritten for each implementation.

``quick-start" integration capabilities

Using ASCII file transfer and a proprietary batch client interface, RhythmLink provides the capability to create a ``quick-start" interface that allows users to begin using the RHYTHM application immediately while a more robust interface is being built in parallel. The cost of this ``quick-start" interface is easily recouped within a short time frame from the results of the RHYTHM implementation.

application integration

Using open technologies such as DCOM or CORBA, applications can interact with RHYTHM through distributed objects. i2 even supplies standard `planning objects' that can be utilized or mapped to by the cooperating application.

(c) Copyright i2 Technologies, Inc. 1995 - 1998. All rights reserved.

home | back to solutions

< previous | next >

OIPE JC124 MAY 0 3 2004 PATENT & TRADEMARK OFFICE

RHYTHM®

demand planning

In today's dynamic business environment, understanding demand and managing the factors that impact demand has become increasingly critical to the success of many organizations. Whether planning across a worldwide portfolio of businesses, divisions, plants, product families, or individual products, there area tremendous number of factors to consider in order to efficiently drive revenues and reduce supply chain costs. Seasonal fluctuations, economic conditions, promotions, pricing, competitors' activities, and the actions of key customers are but a few of the influences that impact demand.

is everyone working to the same plan?

Often, various departments such as manufacturing, logistics, sales, marketing, and finance create their own forecasts which are used to guide frequently conflicting objectives. Such approaches are commonplace since demand planning tools do not support the ability to generate, store and evaluate multiple plans, include input from any number of internal or external sources, consider causal factors, and effectively manage consolidation of conflicting plans. RHYTHM Demand Planning fully supports the internal collaboration that aligns all of the various plans into a consensus plan.

what planning tools are necessary to effectively manage demand?

RHYTHM provides a demand planning environment that combines the best statistical techniques, unlimited causal factors, and the ability to manage multiple inputs with best-in-class, multi-dimensional data representation and analysis in a user-friendly environment. Using RHYTHM Demand Planning capabilities, planners can accurately model their business in real-time helping users to be more responsive. Through the use of the RHYTHM Demand Planning solution, organizations can greatly reduce forecast error, increase planning accuracy, and link the planning process directly to strategic goals.

how can demand be impacted or ``shaped"?

Many businesses experience demand fluctuations based on factors over which they can exert some degree of control. For example, businesses driven by promotions can use RHYTHM Demand Planning to develop plans based on various strategies, and then analyze each to determine which best meets strategic or tactical goals. RHYTHM Demand

solutions for...

advanced scheduling

data integration

demand planning

distribution planning

manufacturing planning

order promising

transportation planning

12

Planning was the first commercial solution to support promotional response factors based on syndicated POS data from companies such as A. C. Nielsen and IRI, and it continues to set the standard for integration of this and other external data.

key capabilities of RHYTHM demand planning

a multi-dimensional representation of demand

RHYTHM Demand Planning is unique in its ability to manage demand in multiple dimensions. Dimensions are the different levels or definitions through which the user can interact with the data. These dimensions might be geography, products, plants, distribution centers, accounts or customers, or time. Through this capability, users of RHYTHM Demand Planning can manipulate demand plans in the context of their part of a business process. For example, a sales manager might manage demand by customer or region, a product manager by product line, a plant manager by production line, and a financial manager by product line profitability.

flexible forecasting techniques

RHYTHM Demand Planning is an industry leader in providing open access to virtually any method of forecasting. In its standard form, RHYTHM Demand Planning is delivered with 35 forecasting techniques and the ability to automatically pick the best model for a specific scenario. Plus, it includes an open framework for incorporating external techniques and a powerful scripting capability through which users can create their own models.

superior allocation capabilities

To improve the allocation process, RHYTHM Demand Planning has completely uncoupled the forecasting process from the allocation process. Any technique used to forecast can be used to allocate. Additionally, any new technique created may be used exclusively for allocation. For example, a simple moving average may be an insufficient forecasting technique due to price changes or market activities; however, it may represent an appropriate technique for allocation. The selected technique or techniques can be measured for effectiveness by defining the historical time periods in which the technique is simulated. Changes can also be made at any level which can be allocated to the appropriate levels down to the detailed product, geography or customer levels.

intuitive navigation and workflow for improved productivity

Demand Planning adds efficiency and flexibility through an intuitive user interface and additional features designed for greater usability. Features such as ``Bookmarks" enable planners to save an unlimited number of views of the demand plan as they develop forecasts and models and

return to them as needed.

internet focused

RHYTHM Demand Planning provides full access to demand planning information across intranets and the Internet. There is no requirement to build custom web pages or user interfaces. The underlying business objects of RHYTHM Demand Planning can be invoked by a standard web browser.

enabling technology

The RHYTHM Demand Planning database is optimized for speed and performance and uses the most advanced relevant technologies. Central to the object-oriented architecture is an OLAP (OnLine Analytical Processing) engine and full support for OLE (Object Linking and Embedding) and DDE (Dynamic Data Exchange) in a scalable client-server environment. This architecture is complemented by a highly configurable user environment which is optimized for performance and ease of navigation through complex data structures.

(c) Copyright i2 Technologies, Inc. 1995 - 1998. All rights reserved.

home | back to solutions

< previous | next >

OIPE JC12 MAY 0 3 2004 PATENT & TRADEMARK OFFICE

RHYTHM®

distribution planning

RHYTHM's Distribution Planning solution enables logistics managers to create an operating plan that meets the global objectives of the supply chain. Distribution Planning is a subset of capabilities within RHYTHM Supply Chain Planner's tightly-integrated planning architecture. In contrast with traditional distribution planning systems such as Distribution Requirements Planning (DRP), RHYTHM's technology and architecture extends the current set of capabilities to address new and emerging challenges for distribution-centric supply chains.

what differentiates RHYTHM's distribution planning solution?

integrated planning process
RHYTHM provides an integrated planning process that breaks artificial boundaries. It considers the entire planning process-from manufacturing, through distribution and transportation-within a single integrated model.

flexible supply chain representation
The modeling environment allows accurate representation of complex distribution networks with multiple sourcing options, overflow locations, co-packing operations, assembly requirements, and alternate manufacturing and transportation options as well as constraints that are taken into account when deriving plans.

planning decisions mapped to financial goals
The RHYTHM distribution planning solution incorporates constraint-based Master Planning capabilities that help determine when, where, and what quantity to produce, purchase, ship, and store for intermediate and finished goods. These plans can be optimized to maximize Return on Assets (ROA), and profitability while meeting customer service and inventory targets.

immediate visibility of supply chain problems
RHYTHM allows planners to make and understand the consequences of complex, customer-specific trade-off decisions, since it plans at a more detailed level of data than traditional DRP systems.

transportation-enabled planning
RHYTHM considers all supply chain constraints *simultaneously,* including transportation constraints and opportunities such as truck capacity and weight, alternate

solutions for...

advanced scheduling

data integration

demand planning

distribution planning

manufacturing planning

order promising

transportation planning

RECEIVED
MAY 1 0 2004
GROUP 3600

15

modes, and availability of downstream resources such as loading docks or shrink-wrap operations, to generate a *globally* feasible plan.

speed and scalability breakthroughs
RHYTHM's technical architecture provides speed and scalability breakthroughs that are critical in solving today's complex supply chain problems.

key capabilities of RHYTHM distribution planning

comprehensive view of the entire supply chain planning process
The integration of Distribution Planning with other functions - such as Demand Planning and Manufacturing Planning - provides greater management and control over the promotion planning process or channel management to enable sophisticated allocation methods when demand is greater than supply.

extensive supply chain modeling
Supply chains are becoming increasingly complex. By leveraging object-oriented design methodologies, RHYTHM's architecture supports an unlimited number of levels within the supply chain model - extending from suppliers to customers - to easily reconfigure the supply chain network as business conditions change.

superior customer service via exception-based management
Traditional solutions only identify a list of planning problems. RHYTHM's ***Problem-Oriented Planning*** techniques go beyond this to allow a planner to ``drill-down" into the details via a ``point-and-click" user interface to quickly resolve a specific problem. Planners also have flexibility to resolve the problem interactively with the system or by using one of many auto-resolution methods supported within RHYTHM.

integrated support for VMI, ECR, and continuous replenishment
RHYTHM provides support for Vendor Managed Inventory™ (VMI)™, as well as the replenishment and safety stock policies implemented at these inventory locations. The ability to prioritize inventory assigned to VMI™ customers in relation to inventory that will be used to satisfy other customer demand, forecast or safety stock is a significant improvement over traditional VMI™ approaches.

rapid what-if simulation
RHYTHM enables planners to evaluate multiple planning strategies and select the plan that best meets the desired customer service levels with respect to transportation and manufacturing constraints. By leveraging RHYTHM's

Master Planning capabilities, planners can maximize the overall goals of the enterprise such as Return on Assets (ROA) and profitability targets.

sophisticated safety-stock strategies

RHYTHM supports statistical, manual, forward coverage, as well as sophisticated time-phased safety stock strategies to support Product Life Cycle Management where high service levels are required during a new product introduction, but not as important as when the product is phased out. RHYTHM also propagates changes in safety stock levels upstream and downstream to identify constraints in other parts of the supply chain.

flexible user interface and reporting

RHYTHM's user interface is designed to be highly customizable by users to support their preferences, with multiple ways to view and manipulate the plan and supporting data, and the ability to create custom reports.

(c) Copyright i2 Technologies, Inc. 1995 - 1998. All rights reserved.

home | back to solutions

< previous | next >

MAY 0 3 2004 PATENT & TRADEMARK OFFICE

i2 Technologies

home

back to solutions

company
vision
innovation
technology
solutions
support
success

alliances
investors
events
jobs@i2
press

RHYTHM®

manufacturing planning

i2 Technologies' solution for manufacturing planning takes a global approach to intelligently optimize the performance of a manufacturing operation. By analyzing what is best for the manufacturing organization or supply chain as a whole, RHYTHM simultaneously manages multiple and dynamic constraints to develop a feasible operating plan for plants, departments, work cells, or production lines. The resulting plans meet the customer's delivery requirements and business objectives.

how does RHYTHM solve complex planning problems?

RHYTHM manages complex manufacturing operations that involve large numbers of resources and operational steps in real time, as well as solves common planning problems found in factories, such as managing complex bills of material, alternate routings, and optimizing machine setup sequences. This produces an intelligent and feasible production plan along with the associated set of manufacturing and purchasing recommendations. The RHYTHM Manufacturing Planning solution can be used in conjunction with Advanced Scheduling to determine the optimal sequence of operations at each resource.

how does RHYTHM support business objectives?

With its global visibility and constraint management capabilities, RHYTHM creates feasible plans that reflect real-world manufacturing conditions in order to meet manufacturing goals such as improving due-date performance, cutting lead times, improving throughput, and reducing inventory and operating expenses.

how does RHYTHM differ from MRP in deriving a feasible plan?

Traditional MRPII (Manufacturing Resource Planning) logic uses a sequential approach to derive a plan. First, a Master Production Schedule (MPS) is created, which provides the basis for Material Requirements Planning (MRP), and, after this step, attempts to perform Capacity Requirements Planning (CRP). Unfortunately, this approach considers material and capacity as independent variables at each stage that results in an infeasible plan. To resolve this, MRP's logic advocates iterating this sequence multiple times to adjust for changes made at each step. Because RHYTHM simultaneously considers all constraints —material, capacity, operators, tools, etc.—it generates a

solutions for...

advanced scheduling

data integration

demand planning

distribution planning

manufacturing planning

order promising

transportation planning

RECEIVED
MAY 1 0 2004
GROUP 3600

feasible operating plan in a single pass. The entire plan is generated in a fraction of the time since RHYTHM computes the plan in memory.

key capabilities of RHYTHM manufacturing planning

problem-oriented planning that enables immediate resolution

From the Problem Window, RHYTHM enables planners to instantly ``drill-down" into the details of a problem by using ``point-and-click" actions, allowing planners to resolve the problem by expediting material, adding capacity by running additional shifts, or other available options. This capability goes beyond simple exception-based reporting which only identifies problems, but cannot resolve them.

comprehensive support for both finite and infinite capacity planning

Infinite capacity planning is an important step in formulating an optimal, finite capacity plan. Initially, RHYTHM creates a plan that considers finite materials, but infinite capacity to illustrate the ideal level of resource capacity needed to meet customer demand. In infinite capacity planning mode, RHYTHM flags the overloaded resources, allowing the user to take corrective actions to meet the delivery date. However, the user also has the choice of using RHYTHM's constraint-based, load-balancing algorithms to automatically create an optimal finite capacity constrained plan.

accurate real-time due-date quoting capability improves customer service

RHYTHM's memory-resident planning engine is extremely fast where plans are generated in minutes compared to hours in traditional MRP systems that use database-driven engines. Its architecture supports a highly flexible modeling environment that allows users to model their manufacturing operations at a detailed level. RHYTHM can be integrated with order management systems where customer service representatives can confidently quote accurate delivery dates in seconds or determine the status of a customer order in real-time, based upon current production and inventory status.

configurable to fit multiple environments

RHYTHM Manufacturing Planning solutions support assemble-to-order, configure-to-order, make-to-order, make-to-forecast, build-to-stock, and hybrid environments. They also support discrete, batch-process, and rate-based environments in all major industries including metals, high tech, automotive, consumer packaged goods, industrial products, pharmaceuticals, and aerospace and defense industries.

tight integration with existing systems

Using RhythmLink™, i2 Technologies' integration tool, RHYTHM can be integrated with MRP, ERP, and transactional databases. Whether the enterprise has made an investment in a client-server ERP system or is using legacy systems, RhythmLink provides quick and effective integration. Further, through real-time interfaces to MRP and ERP systems from SAP™, Oracle, and SSA, RHYTHM uses the data maintained on these transaction systems to provide advanced planning and optimization capabilities.

(c) Copyright i2 Technologies, Inc. 1995 - 1998. All rights reserved.

home | back to solutions

< previous | next >

transportation planning

Transportation planning is concerned with deriving a demand-driven, feasible plan for transportation resources that are required to move inventory from one location in the supply chain to another. i2 Technologies offers a complete transportation solution that encompasses the tactical, operational, and execution needs of the supply chain. The solution suite is based on capabilities within RHYTHM as well as other solutions through strategic partnerships.

what are the many levels of a complete transportation planning solution?

the tactical level

Tactical planning focuses on deriving plans that synchronize the supply of resources with demand. This is an integral part of the Master Planning function in an enterprise which helps determine when, where, and what quantity to produce, purchase, ship, and store for intermediate and finished goods. This planning activity maximizes Return on Assets (ROA) and profitability while meeting customer service and inventory targets. As a result, transportation-related decisions made at the tactical level drive subsequent decisions made at the operational and execution levels. Unlike traditional solutions that consider transportation only as an execution-level activity, RHYTHM offers the potential to maximize transportation savings by creating a feasible plan that is aligned with a company's ROA, profitability, and customer service goals.

the operational level

As the plan nears execution, decisions regarding load consolidation, mode/carrier selection, routing and scheduling need to be made. Using information within RHYTHM or from other partner components, RHYTHM consolidates orders or shipments into loads, selects the appropriate mode and carrier, as well as schedules and routes the loads. All planning is done respecting the constraints of the transportation system including container capacity, available equipment, and transit times.

the execution level

With real-time links to dispatching and load tracking, the RHYTHM Transportation Planning solution manages the complete execution of transportation processes with detailed information on transportation parameters including cost, service performance, and transit times.

solutions for...

advanced scheduling

data integration

demand planning

distribution planning

manufacturing planning

order promising

transportation planning

21

VENTURE™ Freight Management* is a fully integrated, transaction-based transportation management system that improves the speed, efficiency, and effectiveness of the transportation management process across the enterprise, or multiple enterprises. VENTURE Freight Management supports the activities necessary to manage and execute the full life cycle of the transportation process—from customer service/order management to financial settlement and performance measurement—for large shipping organizations such as manufacturers, retailers, and wholesale distributors, or for third-party logistics providers serving those shippers. Freight Management has saved customers between 5-20 percent of their transportation costs. Given that transportation costs range between 2-15 percent of most organizations' costs structures, the cost savings can be significant.

**The VENTURE Freight Optimizer and VENTURE Freight Management solutions are offered through a strategic partnership between i2 Technologies and InterTrans Logistics Solutions.*

(c) Copyright i2 Technologies, Inc. 1995 - 1998. All rights reserved.

home | back to solutions

< previous | next >

23

http://web.archive.org/web/19980526040919/www.i2.com/html/i2_solutions_for_tra...